XVIII. *Notes on Butterflies collected by* J. H. Bowker, Esq., *in Basuto-land, South Africa; with descriptions of some New Species.* By Roland Trimen.

[Read 7th November, 1870.]

Her Majesty's gracious declaration of the Basutos as British subjects, has proved of benefit to Entomology, inasmuch as one of the consequences of that proclamation was the stationing of a most devoted insect collector, Mr. J. H. Bowker, in Basuto-land, with his detachment of the frontier armed and mounted police. Mr. Bowker, who has recently received his well-earned promotion to the chief command of the corps, crossed the Orange River on the 22nd March, 1868, and remained in Basuto-land until towards the end of June, 1870. During this period, he had occasion to visit every part of the country, except the sources of the Caledon River, and has carefully collected all the species of *Rhopalocera* with which he met on his journeys, as well as those occurring near his principal stations, Koro-Koro and Maseru.

Basuto-land may be said to extend over about two degrees of latitude, being situate between 28° 30′ and 30° 30′ S., according to the existing maps, and, as at present limited, lies almost entirely between the Caledon River (a considerable Northern tributary of the Orange River) on the West, and the head-waters of the Orange River on the East. It is a high-lying region throughout, and mountainous all along its Eastern border. The following remarks by Mr. Bowker will give a general idea of the tract of country. He writes: "Near the Caledon there extend high flat-topped hills of white sandstone, with rocky summits, and between them wide levels much cut up with gullies and streams. With the exception of a few willows along the Caledon itself, there are no trees on the river-sides in this part. The streams falling into the Caledon all take their rise in the Maluti mountains (a Southern continuation of the Drakensberg range), but do not penetrate far into the mountains, being mostly cut off by the first range, of which the Machecha (about 10,000 feet above the sea) and Thaba

Telli (about 8,000 feet) are the highest points. At the back of these, there rise a number of streams, all running westward, which form the heads of the Orange River. This region is but little known, being almost too cold for human habitation, except for a few months of the summer, and even then being much subject to violent rain-storms and heavy mists, which render travelling dangerous among the numerous swamps and patches of boggy ground. The rivers here are thickly fringed with fine willows, and run in deep narrow valleys; and the difficulty of following their course can only be understood by those who have attempted it. The range of mountains appears to have resulted from rapid upheaval, an igneous rock in many places covering the level strata of white sandstone, and forming spurs running down towards the Caledon River. This peculiar tract is almost devoid of animal life; and when there in December, 1868, I met with very few insects except in the valley of the Makaleng River or Kornet Spruit. The only persons inhabiting this part are a few wandering Bushmen, who occasionally, during severe weather, make a raid into more favoured localities."

The country of which the above gives an account, is very clearly by no means well adapted for butterfly life; and, in fact, nearly the whole of Mr. Bowker's specimens were captured in the lower-lying ground near the Caledon, where a comparatively milder climate prevails. But even at Maseru, the frosts in winter are keen; Mr. Bowker writing at the end of May, 1869, said—"The cold here now is something intense: the water brought to me the other morning, when the sun was shining brightly and had been up for half-an-hour, in about twenty minutes' time was covered with a coat of ice of about the thickness of a dinner plate; and when, after throwing out the ice, I had washed, the soapy water was, in ten minutes' time, again frozen over."

The number of species found in Basuto-land is 62, less than one-fourth of the total number which I have now recorded as natives of extra-tropical Southern Africa. Compared with the productiveness of the adjacent region of Natal, whence I have noted more than 200 species, this paucity appears the more remarkable; but it must be remembered that the bulk of Natalian butterflies are from the narrow belt of well-wooded country on the

coast, the abundance of species most markedly decreasing in the higher districts inland. The richness of the coast-line in comparison with an elevated inland region like Basuto-land is even more striking, on looking to the very limited extent and southern position of British Kaffraria (now forming part of the Cape Colony), where ninety-four species were collected by Mr. D'Urban during a year's stay (see Tr. Ent. Soc., 3 ser., i. 398). Taking, however, the catalogue of species inhabiting the Cape Colony (including British Kaffraria), it will be seen that Basuto-land, considering its comparatively small size, is not so very much the poorer, the Colony at present mustering only about one hundred and fifty-two species. Among the sixty-two Basuto species, there are fourteen not known to occur in the Cape Colony, five of which (together with nine others) are not recorded from Natal; but little value can be attached to these figures, owing to our very scanty information respecting the entomology of the northern border of the former Colony, and the western border of the latter, in which tracts of country it is most probable that the species wanting in the existing lists do mostly, if not all, occur.

The following table shows the extent to which the various groups of South African *Rhopalocera* are represented in Basuto-land, in comparison with their known numbers south of the tropic.

	South-Africa.		Basuto-land.	
NYMPHALIDÆ.				
Danainæ	5		1	
Acræinæ	18		4	
Satyrinæ	20		4	
Nymphalinæ ..	49		9	
		92		18
ERYCINIDÆ *		1		0
LYCÆNIDÆ		68		26
PAPILIONIDÆ.				
Pierinæ	46		7	
Papilioninæ ..	13		1	
		59		8
HESPERIIDÆ		48		10
		268		62

* A species of *Libytheinæ*. Mr. W. Morant has sent me a figure of a *Libythea*, captured by him on the coast of Natal, which appears to be a new species, allied to *L. Lepita*, Moore.

Generally the Families range in the following order, according to the number of species contained in each, viz., 1. *Nymphalidæ;* 2. *Lycænidæ;* 3. *Papilionidæ;* 4. *Hesperiidæ,* and 5. *Erycinidæ;*—in Basuto-land the order is as follows, viz., 1. *Lycænidæ;* 2. *Nymphalidæ;* 3. *Hesperiidæ,* and 4. *Papilionidæ.* The scanty representation of the last-named family is very marked, only one species of *Papilio* (the most widely-prevalent in Africa), and respectively three and two species of the rich genera *Pieris* and *Callosune*,* having been met with in the Basuto country.

Only two species, *Lycæna Letsea* and *L. Macalenga,* appear to be peculiar to Basuto-land; the other new species (five) described in this paper, being known to occur in other parts of Southern Africa. *Lycæna* is by far the largest South-African genus of butterflies, no less than thirty species being now recorded, in addition to several undescribed forms in collections.

Family NYMPHALIDÆ.

Sub-fam. Danainæ.

Genus Danais, Latreille.

Danais Chrysippus.

Papilio Chrysippus, Linn. S. N. (ed. xii.) ii. 767.

Mr. Bowker has sent specimens of this widely prevalent species from Maseru, and notes the butterfly as being very numerous there in the autumn months.

I have lately found, for the first time, the singular fascicled anal appendages, observable in several *Euplœæ* and (rarely) in *Danais Echeria,* occurring in a ♂ *D. Chrysippus.* These appendages seem peculiar to the ♂ sex, so far as I have noticed; and the rarity of their appearance leads me to imagine that they are either lost or

* Mr. Bowker writes that the single example of *C. Evenina* sent to Cape Town, was *the only* "Red-Tip" (*C. Agoye,* the second species found, has a small ochreous apex) seen by him during two years' stay in Basuto-land.

reduced to a state of uselessness soon after the butterfly's disclosure. The specimens of the genus *Danais* in which I have found them have invariably been very fresh individuals, with the abdomen still limp and swollen from the pupa case.

Sub-fam. Acræinæ.

Genus Acræa, Fabricius.

Acræa Horta.

Papilio Horta, Linn. S. N. ii. 755.

The specimens forwarded by Mr. Bowker do not differ from those found within the limits of the Cape Colony.

Acræa Neobule.

E. Doubl. Gen. Di. Lep. pl. xix. f. 3.

These examples from Basuto-land (a ♂ and two ♀) are smaller than the type specimens (two ♀) from Congo, in the collection of the British Museum, and also those specimens from Natal and the Cape Colony, in my own collection and in that of the South African Museum. The species is closely allied to *A. Horta*, and may be said to occupy a position between that species and *A. Mahela*, of Madagascar. From the former insect, it constantly differs in having spots on the fore-wings in, beyond, and below the discoidal cell,* and in the complete black border of the hind-wings, which *encloses* the spots of the ground-colour; its abdomen, in both sexes, but especially in the ♂, being much paler than that of *Horta*, owing to the greater width (in some instances *confluence*) of the pale ochreous markings. From *A. Mahela*, judging from Boisduval's figure and description in the *Faune Entom. de Madagascar*, p. 31, pl. vi. fig. 1, the well-marked border of the hind-wings readily distinguishes it, the Madagascarene *Acræa* having only small fuscous spots at the extremities of the nervules; but the other markings are almost identical in the two butterflies,

* It should here be noted that a ♂ *Horta*, from Oudtshoorn, Cape Colony, in my collection, has both a cellular and three infra-cellular spots faintly marked; but it wants the small spots beyond the end of the cell.

except that *Neobule*, like *Horta*, possesses some short reddish rays at the apex of the fore-wings, which appear to be wanting in *Mahela*. The fore-wing spots appear to be less constant in the ♂ *Neobule* than in the ♀.

Mr. Bowker's specimens are from Maseru. I have examined examples of *Neobule* taken in Damara-land by Mr. J. A. Bell, in the Cape Colony (Kenhart and Colesberg) by Dr. Chittenden and Mr. A. F. Ortlepp respectively, in the Trans-Vaal (Potchefstroom) by Mr. V. E. Noren, and in Natal (D'Urban) by Mr. McKen and myself.

[At the British Museum, *Neobule* is now regarded as only a variety of *Mahela*. Probably *Horta*, *Mahela*, and *Neobule* are but one slightly variable species.—*Sec. Ent. Soc.*].

Acræa natalica.

Boisduval, App. Voy. de Delegorgue dans l'Afr. aust. p. 590 (1847).

In my *Rhopalocera Africæ australis*, pp. 97-98, I treated *A. natalica* as a variety of *Hypatia*, but at the same time pointed out numerous marks of distinction between the two forms. Subsequent investigations, and the observation of *natalica* in life, have convinced me that Boisduval's species is well founded.

A single ♀ specimen, sent by Mr. Bowker from Maseru, seems to be referable to this species. It is considerably smaller than usual, expanding only 1 in. 6½ lin.; the spots are smaller and less numerous, and the hind-marginal border of the hind-wings, as well as the apical one of the fore-wings, is not nearly so broad. In the *fore-wings*, the transverse costal stripe beyond the cell consists of but three small separate spots, instead of four rather large sub-confluent ones; the spot immediately below these is scarcely perceptible; and the two minute submarginal spots, generally well-marked on either side of the first median nervule, are wanting. In the *hind-wings*, there is a conspicuous discal white suffusion* towards the inner margin, covering the outer third of the discoidal cell, and extending a little above and beyond it; only four of the usual eight spots of the discal row are present, viz: the two next the inner margin (which are indistinct), a small one just beyond the end of the

* This suffusion of white is present, in a less degree, in an indubitable ♂ of *Natalica* taken by Mr. Bowker on the Bashee River, Kaffraria.

cell, and a good-sized one on the costa; and the minute spot immediately beyond the upper terminal angle of the cell is wanting. On the *underside* the colouring is brighter and redder. In the *fore-wings*, the spots noted as wanting on the upperside are present, with the exception of the upper of the two submarginal ones, and though small are distinct; in the *hind-wings* the discal row of spots is as above described, with the addition of a small spot on the inner margin; the inner spot in the cell is wanting, as well as the minute one immediately beyond the upper terminal angle; the basal and inner marginal reddish-pink colouring is broader and brighter than usual; and the spots in the black hind-marginal border are much smaller than usual, more rounded, and white instead of yellowish. The spots of the head, collar, and abdomen are conspicuously white, and unusually large.

Acræa Anacreon.

Trimen, Tr. Ent. Soc. 1868, p. 77, pl. vi. f. 3, 5 (♂), f. 4 (♀).

All the examples sent by Mr. Bowker from the elevated region at the heads of the Orange River, as well as those from the heads of the Umzimvoobo or St. John's River, on the Kaffrarian side of the Drakensberg range, are very much smaller than those which I met with in Natal, and considerably paler in colour. They expand only from 1 in. 8 lin. to 1 in. 10 lin.; and the males approach the two specimens taken by the same gentleman towards the southern border of Kaffraria proper, in the character of an indistinct sub-apical bar, paler than the ground-colour, in the fore-wings. On the underside of the hind-wings the pink markings are very faint. Two of the ♂ examples have the same minute spot as in the ♀ between the median and submedian nervures of the fore-wings.

Sub-fam. Satyrinæ.

Genus Leptoneura, Wallengren.

Leptoneura Bowkeri, n. sp. (Pl. VI. fig. 2.)

A note of the principal distinguishing features of this butterfly is given in "Rhopalocera Africæ australis,"

p. 194. I there treated it as a widely-aberrant variety (B) of *L. Clytus;* but a wider knowledge of its range, and the opportunity of examining more numerous examples, have led me to regard it as a good species.

♂. Exp. 1 in. 10 lin.—2 in. ½ lin.

Allied to *L. Clytus,* Linn. (S. N. ii. 768).

Dark brown, with a rufous gloss. Fore-wing: a strongly curved row of six whitish irregularly shaped spots (of which the upper three are in contact with each other, but the lower three separate, sub-rhomboidal, and diminishing in size downward) running from the costa a little beyond the middle to just above the first median nervule, near hind margin; externally contiguous to the second spot of this row, near the apex, an indistinct small black ocellus, unipupillate with bluish-white. *Hind-wing:* a submarginal row of four or five moderately-sized white-unipupillate black ocelli, in narrow dull-rufous rings.

Underside. Hind-wing and apex of fore-wing very slightly paler than the rest of the surface. *Fore-wing:* a row of spots as above, but the fifth and sixth spots more or less tinged with fulvous, and a faint trace of a seventh spot (also fulvous) below the first median nervule; a spot, and a curved stria beyond the spot, rather darker than the ground-colour, about the middle of the discoidal cell; two parallel dark lines along hind-margin, the inner one becoming obsolete about the second discoidal nervule. *Hind-wing:* a short dark transverse streak in discoidal cell, near base; a dark line closing the cell; two somewhat suffused dark stripes across the wing, one (edged with grayish scaling outwardly) before the middle, dentate, but continuous and tolerably regular, the other (edged with grayish scaling inwardly) irregular, more strongly dentate, and abruptly interrupted on the third median nervule; ocelli seven (but that nearest the costa small and indistinct, or sometimes wanting), usually ill-defined, in brownish-ochreous rings; two parallel marginal lines distinct throughout.

Besides the five Basuto examples (two from Koro-Koro) from which the foregoing description is made, I have before me three Kaffrarian specimens taken by Mr. Bowker on the Bashee River, and one captured by Mr.

Walter Morant, at Karkloof, Natal; as well as a drawing made by Mr. Mansel Weale, of an individual met with either in the Kagaberg or Winterberg, in the Bedford Division of the Cape Colony. In two examples, the small and imperfect ocellus of the fore-wings is accompanied, on the upper side only, by a minute black spot, below and separate from it, on the outer edge of the third spot in the whitish band. In one of the Bashee River specimens, all the spots (seven) of the band are unusually small, and completely separated, the three lower ones being minute and fulvous-tinged, both on upper and undersides of the wings.

The insect may readily be distinguished from *L. Clytus* by its smaller size; darker ground-colour; total want of narrow ochreous band beyond ocellus of fore-wings; much narrower, paler, and more strongly-curved macular band, and almost obsolete ocellus of the fore-wings—both which markings are much further from the end of the discoidal cell, and nearer to the apex, than in *Clytus;* and the much wider distance apart (on the underside of the hind-wing) of the two transverse dark stripes at their costal origin. The antennæ are rather paler than those of *Clytus.*

L. Bowkeri is clearly a lover of high-lying localities, all the recorded specimens having occurred at a tolerable elevation. Mr. Bowker notes it as not rare in Basutoland.

Genus Erebia, Dalman.

Erebia Sabacus.

Trimen, Tr. Ent. Soc., 3 ser., ii. 176; Rhop. Afr. austr. p. 200, pl. iv. f. 1.

A single worn specimen of the ♀ was taken in the Maluti Mountains. It resembled very closely the variety prevalent in Kaffraria and Natal, having the clouding of the hind-wings and the ocelli strongly marked and rather suffused. A much-worn ♂, from some part of the country not specially indicated, belonged to the same variety.

Erebia Hippia.

Papilio Hippia, Cramer, Pap. Exot. iii. 48, pl. ccxxii. f. C, D.

I have met with no example exactly corresponding with Cramer's figures, which represents a ♀ in which the fulvous on the upperside is widely developed, in the fore-wings extending to the base, and the outermost of the two incomplete lines crossing the underside of the hind-wings is unusually distinct and dentate. The Basuto-land ♀ specimens, however, are nearer to Cramer's type than those which I have taken near Cape Town and Graham's Town, as far as the upperside is concerned, though the underside of the hind-wings is less hoary, and inclining to ochreous. The marked feature in the examples sent by Mr. Bowker is the prominence of the apical ocellus on the underside of the hind-wings, which is obsolete in all the Colonial specimens that I have examined, except in the ♂ from King William's Town, mentioned in my published Catalogue (p. 200). But even among the Basuto individuals this feature is most variable: among nineteen received, five (including two ♀) exhibit no trace of it; one has it very small; five present it small, but distinct; two (♂ and ♀) possess it of a moderate size; five have it large; and one (a ♂) has it very large and conspicuous. The anal-angular ocellus is much less prominent, and only appears on the upperside, as in Cramer's fig. C, in two specimens, which have the apical ocellus of the underside large; and one of these presents on the underside, in the right hind-wing only, an additional small ocellus adjoining that near the apex.

Hab.—Maseru and Koro-Koro.

The species is widely spread in South Africa, frequenting mountainous or hilly ground.

Erebia Narycia. (Pl. VI. fig. 1.)

Pseudonympha Narycia, Wallengren, Lep. Rhop. Caffr. p. 32 (in Kongl. Svensk. Vet. Ak. Handl. 1857).

The Basuto-land specimens agree exactly with Wallengren's description, with the trifling exception that the

third ocellus in the row of five, on the underside of the hind-wings, is of medium size, and about as large as the fourth. They are considerably smaller and paler than the Kaffrarian examples received from Mr. Bowker (from which the description in Rhop. Afr. aust. p. 198 was made), and those taken by myself in Natal, expanding only (five ♂, three ♀) from 1 in. 5½ lin. to 1 in. 8 lin. In one ♂, on the underside of the hind-wings there is a minute imperfect ocellus attached to the fifth ocellus on the side next the anal angle; but, generally, the bipupillate character of ocellus in the Kaffrarian and Natalian individuals is wanting in those from Basuto-land. The larger size, darker ground-colour, smaller upperside fore-wing fulvous, upperside hind-wing ocelli, and fulvous-tinged rings of all the ocelli, indicate the specimens found nearer the coast as probably constituting a distinct race from that inhabiting Basuto-land. It must, however, be noted, that a specimen taken as far north and inland as Potchefstroom, in the Trans-Vaal Country, by Mr. Walter Morant, belongs to the Kaffrarian form. It is further remarkable for having all the four ocelli of the hind-wings visible on the upperside. At the same time, one lately sent me from the Trans-Vaal Country by Mr. T. Ayres, agrees in all respects with the Basuto-land (or type) form.

Mr. Bowker forwarded a good many examples of this butterfly from the Maluti Mountains (a southern continuation of the Drakensberg range), and notes the species as occurring "all over the country, on high hills and rocks."

Sub-fam. Nymphalinæ.

Genus Atella, E. Doubleday.

Atella Phalantha.

Papilio Phalantha, Drury, Ill. Nat. Hist. i. pl. xxi. f. 1, 2.

Mr. Bowker notes this butterfly as common in Basuto-land about the beginning of March, 1870. The only specimen received from him is a very fine and strongly-marked ♀, expanding 2 in. 7 lin. He describes the

species as frequenting the common willow (*Salix gariepensis?*), and states that the larvæ had almost destroyed some young willows planted in his garden, adding that the "St. Helena willow" remained untouched.

The type-form of this species is figured by Drury from a large ♀ example from "China." African specimens generally differ from the Oriental ones, by presenting only very faint traces of, or wholly wanting, on the upperside, a row of three or four spots continuous of the macular marking on costa of fore-wings beyond the middle, which row is prolonged across the hind-wings, from the costal streak of those wings, by some short disconnected blackish lines; and also by wanting, on the upperside of the hind-wings, certain small markings of the underside, viz., a dot in the discoidal cell near its upper angle, and an indistinct row of disconnected short lines near the base. It must be noted, however, that all these missing or vague markings, as far as the upperside of the African specimens is concerned, are always present as usual on the underside; and also that the distinction between African and Asiatic examples is not constant, as Cramer (Pap. Exot. pl. ccxxxviii. f. A), figures a specimen from "China" or the "Coromandel Coast," which not only agrees with African individuals generally, in wanting all the upperside markings just enumerated, but even makes an approach to the Congo variation, named *Eurytis* by E. Doubleday, in its defect of one (that nearest the base) of the three ordinary spots lying immediately below the median nervure of the fore-wings. As noted in my Rhop. Afr. aust. p. 117, the underside colouring and strength of marking varies much, as well in African as in Asiatic* specimens; and I am, on the whole, of opinion, that there is but one species, common to both continents.

Genus Pyrameis, Hübner.

Pyrameis cardui.

Papilio cardui, Linn. S. N. ii. 774.

This is noted as numerous in Basuto-land. A ♂ example received from Mr. Bowker, is well-developed

* A rather small ♂, from "Coromandel," figured on Cramer's pl. ccexxxvii. f. D. E., is a remarkable example of very strong marking on both surfaces of the wings.

and richly coloured. Cramer remarks (Pap. Exot. i. 41) that the specimen figured as *P. carduelis* on his pl. xxvi. f. E. F. (in text f. C. D.) was received from the Cape of Good Hope. If his figures are accurate, the specimen in question presented a peculiarity in the pale markings of the underside of the hind-wings, which are depicted as unusually broad and quite white.

Genus Junonia, Hübner.

Junonia Cebrene, n. sp.

Closely allied to *J. Œnone,* Fabr. (Syst. Ent. 490).*

Exp. 1 in. 10½ lin.—2 in. 3 lin.

♂. *Fore-wing:* ochre-yellow marking much smaller than in *Œnone,* paler in its central portion, not covering basal part of wing, but commencing at about the middle of the cell, deeply indented by costal black beyond the middle, but not by any disco-cellular terminal streak. *Hind-wing:* basal blue spot more violaceous, larger, rounder, not flattened superiorly; the space between spot and ochre-yellow patch narrower; the patch itself much smaller, narrower on the inner margin, not extending so far in the direction of the costa; the dark hind-marginal lunular striæ, excepting that at the anal angle, scarcely traceable.

Underside: universally of a less ochreous tint. *Fore-wing:* terminal disco-cellular streak thinner and fainter. *Hind-wing:* the transverse striæ fainter, sub-dentate instead of sharply crenulate, especially the sub-basal and sub-marginal ones.

♀. Generally similar to ♂, but duller. *Fore-wing:* the cell yellow-dusted in basal half, and containing a transverse ochreous streak a little before the patch of the same colour; the patch itself smaller, commencing rather further from the base, more deeply indented with black, both superiorly and inferiorly, and crossed by a

* Linné's brief diagnosis of *Œnone* in the *Systema,* and his detailed description in the *Museum Ludovicæ Ulricæ,* &c., are unquestionably made from examples of the species figured by Cramer under the name *Clelia,* fifteen years after the publication of the latter work. In the *Museum* (p. 275) there is, however, described a "Varietas *Œnones,*" which is evidently the Indian *Œnone* as now recognized. I suppose, therefore, that, in strictness, the name *Œnone* should attach to Cramer's *Clelia*; but in that case *Œnone,* auct., would require a new nomination; and it will perhaps be better to let the recognized *Œnone* stand as "*Œnone,* Fabr.," the latter author's description in *Systema Entomologiæ* (1775) being unmistakeably that of the butterfly generally known by that name.

well-marked terminal disco-cellular black streak; the two *underside* ocelli more or less apparent. *Hind-wing:* the blue spot much smaller and duller; ochre-yellow much larger, extending further towards the costa, enclosing two (sometimes blue-centred) black spots; a single, well-marked, hind-marginal lunulate streak, instead of the two (or sometimes three) parallel streaks found in *Œnone*.

Underside. Markings more distinct than in ♂. *Hind-wing:* rather more brownish in tint.

Prolonged observation of the constancy of the distinctions above pointed out, has led me to separate the African race of *Œnone* from the Asiatic.* The much more limited area of ochre-yellow, and the different tint and totally different form of the blue spot, serve at a glance to distinguish the African form, and render it more readily separable from the Asiatic than is the case in the analogous relation of *Papilio Demoleus* and *P. Erithonius*. I am not aware that any figure of the African form has been published. Cramer (Pap. Exot. i. p. 55) gives both "China" and "Cape of Good Hope" as localities of *Œnone*, but his figures (A. B. C. pl. xxxv) are evidently made from Asiatic specimens.† Godart, however (Encyc. Méth. ix. 318) records only the locality "Cap de Bonne Espérance," and, as he describes the blue spot as closely resembling that of *J. Clelia* in shape and size, probably drew up his diagnosis from South African examples.

The Basuto-land specimens received do not differ from those taken in other parts of Southern Africa.

Junonia Clelia.

Papilio Clelia, Cramer, Pap. Exot. i. 33, pl. xxi. f. E. F.

Cramer's figures are very roughly drawn, especially that representing the upperside (E). They depict a

* [Mr. Butler had independently arrived at the same conclusion, and in a paper read before the Society on the 4th July, 1870, described the African form as distinct. See the Notes on a Collection of Insects sent by Mr. Ansell from Kinsembo, *post*.—*Sec. Ent. Soc.*].

† There is great variability in the size of the Oriental specimens. The largest that I have seen are from China, one of these expanding 2 in. 7 lin., while the North-Indian rarely exceed 2 in. 2 lin.; and those that I have received from Southern India (Bangalore), as well as two Cingalese examples taken by Mr. E. L. Layard, do not attain an expanse of two inches, one of the latter being only 1 in. 8½ lin. across the wings. *J. Cebrene* occupies an intermediate position as regards size, not reaching either of the extremes noted.

"Sierra Leone" ♂ specimen, and except in their smaller size, agree pretty nearly with an example from the Gold Coast, given me by Mr. Swanzy.

A single example forwarded from Maseru, does not differ from South African specimens generally. The species varies but little in the southern portion of its range, the only aberrant individual that I have seen being a ♀ (taken at St. Lucia Bay, by Col. Tower, of the Coldstream Guards) in which, on the underside, the hind-wings and the apices of the fore-wings are uniformly clayey-ochreous, with a slight ferruginous tinge, and the ordinary markings obliterated; the inner edge of the transverse band of the hind-wings being defined by a slightly paler line, and the five ocelli only indicated by a row of faint fuscous dots. Judging from Cramer's figures, and the Gold Coast specimen in my collection, I am led to think it probable that, as far as the ♂ is concerned, the Southern *Clelia* differs from the Western type-form, on the upperside, in the greater width of the sub-apical white bar, and the less distinct cellular red striæ of the fore-wings; and in the more violaceous blue spot, and more approximate marginal lunulate streaks of the hind-wings: while on the underside, the colouring of the hind-wings presents a slight inclination to a reddish tinge, the central fascia and the ocelli being very much fainter and duller.

A ♂ from Madagascar (presented to me by Mr. J. Caldwell, of Mauritius) presents many characters in common with both Southern and Western *Clelia*, but differs from all the African specimens that I have examined, in the remarkable narrowness of the sub-apical bar of the fore-wings.

Junonia Pelasgis.

Vanessa Pelasgis, Godart, Enc. Méth. ix. 820.

Mr. Bowker writes that he pursued, and all but captured this species, on the summit of the Koesberg, near the southern boundary of Basuto-land, in February, 1869.

Junonia Cloantha.

Papilio Cloantha, Cramer, Pap. Exot. iv. 93, pl. cccxxxviii. f. A. B.

No example of this butterfly has been sent by Mr. Bowker, but he informs me that he met with the species in the Maluti Mountains, "not far from the heads of the St. John's River, but within the watershed of the Orange River."

Genus Diadema, Boisduval.

Diadema Misippus.

Papilio Misippus, Linn. S. N. ii. 767.

It has not been without some hesitation that I have followed Hopffer, Wallace, and Butler in altering the name of this butterfly from its generally known title of *Bolina*; because it scarcely admits of a doubt that Linné included both this species and *D. Auge*, Cram., under his *Bolina*. As, however, it is indisputable (as pointed out by Hopffer, in Peters' "Reise nach Mossambique," p. 385, published in 1862) that the only detailed description of *Bolina* given by Linné (Mus. Lud. Ulr. p. 295), applies to the butterfly named both *Auge* and *Lasinassa* by Cramer, and as, moreover, the only figure which Linné cites is that of Clerck's Icones (pl. xxi. f. 2), which represents the latter insect; I suppose that entomologists are in strictness bound to abide by the great naturalist's own fullest diagnosis of his species *Bolina*. In 1867, I referred to the Linnean Cabinet, in the hope of determining the question; but I found both species associated as one, though the only specimen bearing the label "*Bolina*," was one of *D. Auge*, Auct. Mr. Wallace (Tr. Ent. Soc. 1869, p. 279) is mistaken in stating that Cramer was the first to quote Linné and Clerck for the species *Bolina*, Auct., Drury having done so in the first volume of his "Illustrations," published in 1770, nine years before the appearance of the "Papillons Exotiques." Cramer, indeed (i. 102), cites Drury's figures as well as that in Clerck's Icones. Hopffer (*loc. cit.*)

adopted the name *Misippus* for the till then received *Bolina*, as Messrs. Butler and Wallace have also done recently, observing that he did not consider the fact of the sexes having been treated as distinct species by all authors until Boisduval, as any objection to extending to the male the name bestowed upon the female.

This appears to be a common species in Basuto-land. All grades of the ♀ occur there, from the ordinary type-form (=*Diocippus*, Cr.) with the strongly-marked white-spotted black apex of the fore-wings to examples of the variety *Inaria*, even more completely deprived of the characteristic apical markings than is shown in the specimen delineated in Cramer's pl. ccxiv. f. A. B. Two of the intermediate specimens are much suffused with white in the hind-wings.

In March, 1870, Mr. Bowker forwarded to me two living pupæ, one of which resulted in a ♂ of the ordinary appearance, and the other in a very fine ♀ of the *Inaria* variety. These pupæ were found suspended by the tail in clefts of rocks. In general character and appearance they strongly resemble the figure (from a drawing of Mr. E. L. Layard's) of the pupa of the Cingalese *Bolina* (*Auge*, Cramer), given on pl. v. f. 9a, of Horsfield and Moore's Catalogue of Lepidoptera in the East India Museum (1857); but the wing-covers are proportionally larger, the dorso-thoracic prominence less elevated, the dorsal and lateral pointed tubercles of the abdomen much shorter and thinner, and the anal extremity (especially in the ♀) more truncately rounded off.

Mr. Wallace (Tr. Ent. Soc. 1869, p. 280) observes that the form *Inaria* "is rare in the East, where there is no *Danais* it resembles." It may, therefore, be worth noting that I have seen two Cingalese specimens, one in the British Museum, the other in Mr. Layard's collection, of which the latter has a white suffusion on the disc of the hind-wings, and, except for its slightly paler colouring, does not differ from African examples. A specimen from Madras is recorded in Horsfield and Moore's Catalogue; and the individual figured by Cramer would appear from the text (iii. 37) to have been brought from either Java or Amboyna. It would be very interesting to know if the *Dorippus* form of *Danais Chrysippus*, to which *Inaria* so closely corresponds, is

really unknown from the Asiatic localities where the latter occurs. Godart (Enc. Méth. ix. 188), after giving the East Indies, Java, Timor, Syria, and Naples as habitats of *Chrysippus*, makes this general remark, viz.: "Ces différens pays produisent des variétés dont le fond des ailes est entièrement d'un fauve-brun ou d'un brun-marron clair,"—evidently referring to the form *Dorippus*.

Genus Meneris, E. Doubleday.

Meneris Tulbaghia.

Papilio Tulbaghia, Linn. S. N. ii. 775.

The specimens sent from Maseru are quite like the ordinary Colonial examples, except for their slightly smaller size. The most northern station of this species, of which I am aware, is Greytown, in Natal, where I took it in March, 1867.

Genus Hypanis, Boisduval.

I concur with Mr. Bates (Journal of Entomology, ii. 178) in thinking that the family *Eurytelidæ* of Doubleday (*Biblides* of Boisduval) is composed of genera that cannot satisfactorily be separated from the *Nymphalidæ*, but which should, for the most part, be placed in the sub-family *Nymphalinæ*, in the neighbourhood of such genera as *Crenis* and *Eunica*. In my Rhop. Afr. aust. p. 144, I expressed the opinion that *Myscelia* (*Crenis*) *natalensis*, Boisd., showed considerable affinity to the Eurytelide butterflies. The remarkable length and downward inflection of the palpi is the chief distinguishing character of the genera *Hypanis*, *Eurytela*, &c., and in this feature they appear to be linked to *Eunica* by the singular genus *Libythina* (see Bates, *op. cit.* p. 200), of which the solitary species *Cuvierii* was described by Godart as a true *Libythea*. The dilatation which in *Crenis*, *Eunica*, and *Libythina* marks both costal and median nervures of the fore-wings, is in the Eurytelide genera confined to the costal nervure.

Hypanis Ilithyia.

Papilio Ilithyia, Drury, Ill. Nat. Hist. ii. pl. xvii. f. 1, 2.

A ♂ and ♀, received from Maseru, are of rather small size, and have the black markings of the upperside much narrowed. In these respects, in the transverse row of black dots across the middle of the hind-wings on the upperside, and particularly in the colouring of the underside, the ♂ differs from the generality of South-African specimens, and agrees almost precisely with a Cingalese ♂ in Mr. Layard's collection, belonging to what appears to be the ordinary Indian form, of which the ♀ is figured by Cramer (pl. ccclxxv. f. G. H.) under the name of *Polinice.** Except for its much larger size, Drury's "Senegal" type *Ilithyia* seems to be closer to the form *Polinice*, which prevails in India and Ceylon, than to the strongly-marked (yet most variable) race inhabiting Kaffraria and Natal; and it is certainly remarkable to find examples very near the type occurring in Basutoland and the Trans-Vaal country, from which latter locality Mr. T. Ayres has lately sent me a ♂ quite like Mr. Bowker's specimen, but larger, and only differing from Drury's figure, on the upperside, in having the black marking near the apex of fore-wings rather narrower, and the base of hind-wings obscured with blackish.

The species is stated by Mr. Bowker to be not uncommon in open country.

Family LYCÆNIDÆ.

Genus Lycæna, Fabricius.

Lycæna bætica.

Papilio bæticus, Linn. S. N. ii. 789.

Examples of this very widely spread species from Maseru, are of the ordinary size and appearance.

* These figures have been copied by Herbst (Natur-Syst. bek. Ins. Schmett. ix. pl. cclviii. f. 1, 2) as his "*Götzius*, mas." The *Polinice* of Boisduval (Sp. Gen. Lep. i. pl. ix. f. 6) is from "Senegal," and, judging from the underside (which alone is figured) nearly resembles certain males from Natal, but agrees with Mr. Bowker's specimen in the narrowness of the black markings of the fore-wings.

Lycæna Telicanus.

Papilio Telicanus, Herbst, Natur-Syst. bek. Ins., Schmett. pl. cccv. f. 6-9.

Among the specimens sent from Maseru was a ♀ of unusually large size.

Lycæna Palemon.

Papilio Palemon, Cramer, Pap. Exot. iv. 209, pl. cccxc, f. E. F.

The males of this species received from Koro-Koro and Maseru are richly coloured on the upperside. Of each sex, there is a single example in which the short tails of the hind-wings are so completely wanting, that it scarcely appears as if the butterflies could have lost them. At the same time, I must add, that I have not met with any specimens of this *Lycæna* in which the tails varied from the usual size.

Lycæna Jobates.

Hopffer, Monatsber. d. k. Akad. d. Wiss. zu Berlin, 1855, p. 642; Peters' Reise nach Mossambique, Ins. p. 409, pl. xxvi. f. 9, 10 (♂).

Three males of this rare species have been taken by Mr. Bowker near Maseru, two of them "among grass by the Caledon River." One of these specimens, now before me, agrees in all particulars with Hopffer's figure representing a Querimba example.

Lycæna asteris.

Polyommatus asteris, Godart, Enc. Méth. ix. 657.

In my *Rhopalocera Africæ australis* (p. 247) I grouped together under *Celarus*, Cramer (= *Parsimon*, Fabr., which is the older name) several forms of *Lycæna*, which I was quite unable to separate satisfactorily. The accession of more specimens, and wider knowledge of the distribution of these forms, have by no means solved my difficulties;

but at the same time I find certain races that appear more pronounced than the others, and among them *asteris*, Godt., may safely be treated as one of the most distinct.

The actual specimens on which this species was founded, are stated by Godart to have been taken by M. Jules Verreaux about Table Mountain, and the description given of them accords very nearly with numerous examples collected by myself in the same neighbourhood. From these natives of the Cape Promontory, about a dozen individuals sent from Basuto-land differ in having the cilia regularly varied with black at the extremities of the nervules, and the first (or costal) spot in the discal row on the underside of the hind-wings filled with black instead of brown; while in the ♂, the orange lunule adjoining the black spot near the anal angle of the hind-wings is wanting on the upperside, and in neither sex do the very short tails appear to exist. In connection with these differences, I may note that I have received two specimens from the neighbourhood of Grahamstown (taken by Mrs. Barber and Mr. H. J. Atherstone), have captured two at Mossel Bay, and even met with a single ♂ at Wynberg (where the true *asteris* of Godart is most prevalent), all of which agree in markings with the Basuto examples.

Mr. Bowker notes this butterfly as inhabiting the tops of hills at Koro-Koro and Maseru, and remarks that the females sit quietly among the grass, while the males course actively about. I have observed quite similar habits in the *asteris* taken near Cape Town.

Lycæna Cissus.

Polyommatus Cissus, Godart, Enc. Méth. ix. 683.

A fine ♂ from Maseru agrees with the ordinary appearance of the species.

This is a more widely distributed species than I had supposed. I found it abundantly in Natal; Colonel Tower brought it from St. Lucia Bay; there is a specimen from the Gaboon River in the British Museum; and the Hopeian Museum at Oxford contains a ♀ from Sierra Leone, remarkable for the whiteness of the disc of the fore-wings.

Lycæna Niobe.

Trimen, Tr. Ent. Soc., 3 ser., i. 282; Rhop. Afr. austr. p. 253, pl. iv. f. 10.

One of each sex was taken at Koro-Koro towards the end of 1868. The ♂ is unusually small, but with the underside markings very distinct; and the ♀ closely resembles that figured in my Catalogue.

A very fine ♀, expanding 1 in. 7 lin., was taken at Highlands, near Grahamstown, by Mr. H. Barber, during my stay there in February, 1870.

Lycæna Letsea, n. sp. (Pl. VI. figs. 3, 4.)

Allied to *L. Asopus*, Hopffer (Monatsb. d. k. Akad. Wiss. zu Berlin, 1855, p. 642; also in Peters' Reise nach Mossamb. Ins. p. 410, pl. xxvi. f. 13-15;) and *L. Parsimon*, Fabr. (Syst. Ent. p. 526).

Exp. 1 in. 3½-7½ lin.

♂. *Shining brownish-gray;* cilia slightly paler, not variegated. *Fore-wing:* a terminal disco-cellular streak, sometimes faintly visible. *Hind-wing:* on hind-margin, on each side of the first median nervule, a very faint yellowish lunule, of which the superior is large, and marked externally with a black dot. (The tendency is for these markings to be very faint and indistinct, and in two examples they are blurred and scarcely traceable.)

Underside. Gray: ordinary markings small and neatly defined, resembling those of *L. Messapus*, Godt. (Enc. Méth. ix. 682). *Fore-wing: lower portion of transverse row of white-ringed black spots beyond middle almost always wanting*, the usual number of spots present being four (in one example there are but three, while in another there are five, with the faint trace of a sixth on one side only). *Hind-wing:* a faint pale-blueish suffusion over basal portion; yellow lunules more deeply coloured and much better marked than on upperside, the black dot of the superior one more or less dusted with silvery-blue.

♀. Similar, slightly darker; cilia whiter than in ♂. *Fore-wing:* disco-cellular lunule plainer than in ♂, but

still indistinct. *Hind-wing:* yellow lunules broader and brighter, the black dot strongly marked; in one (the largest) example there is a double row of indistinct whitish acute lunular marks along hind-margin, becoming obsolete towards costa, but in the other two, the outer portion only of the row is indicated by the very faintest whitish scaling.

Underside. All the markings better defined, and with wider white edgings than in the ♂. *Fore-wing:* discal row composed of six spots in the largest example; of six on one side and five on the other, in the smallest; and of five in the third.

In both sexes, when there are more than four spots in the discal row of the fore-wings, the fifth spot is smaller, and (as well as the sixth, when present) placed slightly before the line of the others. The row is but very slightly curved, commencing at a little distance from the costa, immediately above the first discoidal nervule.

From both *Parsimon* and *Asopus*, this *Lycœna* may be distinguished by the darker ground-colour, and smaller, darker, more narrowly white-edged spots of the underside, as well as by the want of any blue on the upperside of the female. From the former, *Letsea* further differs in its smaller size, darker upperside, and much more elongate yellow lunules (when present) in the hind-wings; while it is larger than *Asopus*, and diverges widely in having no trace of hind-marginal white lunules on the upperside in the ♂, and only indistinct traces of them in the ♀.

Mr. Bowker found this dull-tinted species commonly about the waggon-roads near Rouxville and the Orange River, in January, 1869, and also in similar situations near Eland's Bay and Klip Spruit, in the following month.

Lycœna Jesous.

Polyommatus Jesous, Guérin, Voy. en Abyss. p. 383, pl. xi. f. 3, 4 (♂).

A single example of each sex reached me from Maseru early in June, 1870. The ♀ is smaller than usual, and has much less whitish on the discs of the wings.

Since the publication (1866) of the second part of *Rhopalocera Africæ australis*, I have received this exquisite species from near Graham's Town (Mrs. Barber), Murraysburg (J. J. Muskett), Natal (W. Morant), Motito, Bechuana-land (late Rev. J. Frédoux), and the Trans-Vaal (T. Ayres). There is a specimen from the White Nile in the British Museum.

Lycæna Macalenga, n. sp. (Pl. IV. figs. 5, 6.)

Allied to *L. Jesous*.

Exp. ♂ 11¾ lin.; ♀ 11 lin.

♂. Pale, silky, violaceous-blue, with wide pale sandy-brown pink-tinged borders; bases tinged with deep purplish blue; cilia white throughout. *Fore-wing:* blue space separate from basal dark blue, occupying the inner margin as far as the posterior angle, but leaving a hind-marginal border widening to the apex, and a costal border so greatly widening to the basal dark-blue as almost to touch the inner margin; *inner edge of the discal blue strongly defined by a denticulate raised line of paler blue. Hind-wing:* borders somewhat similar, but that of the hind-margin of even width; the inner edge of discal blue similarly defined about the origin of the subcostal nervules; two indistinct fuscous hind-marginal spots between the second median nervule and anal angle, the superior one the larger.

Underside. Much resembling that of *L. Jesous*. *Fore-wing:* the black and ferruginous subcostal stripe ending before the extremity of the cell; *no* spot in the cell; the short streak closing the cell straighter and narrower than in *Jesous*; the submacular transverse fascia commencing further from the costa and from the base, not so oblique, curved inwardly rather than outwardly, its terminal separate spot much closer to, and almost immediately below, the closing streak of cell; submarginal lunulate streak more denticulate, obsolete inferiorly; no hind-marginal black dots, but indistinct brownish marks; between the end of the subcostal stripe and the beginning of the submacular transverse fascia, *a longitudinal row of three black white-ringed dots*, of which the middle one is the largest. *Hind-wing:* basal stripe much thinner; third black spot of sub-basal row as large as

the first and second, the fourth indistinct (the reverse being the case in *Jesous*); second spot of discal fascia elongate and oblique, instead of round; hind-marginal markings differing as in fore-wing; the two hind-marginal black spots without any blueish scaling.

♀. Pale, glistening, sandy-brown, with a faint pinkish gloss, but without the blueish bases, whitish discs, or terminal cellular spots so well marked in *Jesous*. *Hind-wing:* two fuscous spots more apparent than in the ♂, or in *Jesous* ♀.

Underside. As in ♂, but the ground-colour browner throughout. *Fore-wing:* outermost of three subcostal dots wanting; sub-macular fascia prolonged to submedian nervure (as in ♀ *Jesous*) by an additional separate spot.

The fore-wings are rather markedly elongate in both sexes, being produced apically. It is singular that the under-surface should show such decided resemblance to that of *Jesous*, while the upperside differs so widely in both ♂ and ♀. I do not remember to have seen any *Lycæna* in which the blue occupies quite the same position as in the ♂ *Macalenga*, or in which it is internally so curiously defined.

My description is made from a single specimen of each sex, taken by Mr. Bowker "on flowers, near Olifant's Been, on the Cornet Spruit (Makaleng River), in February, 1869." The captor states that he only observed these two individuals.

Lycæna Trochilus.

Frivaldszky, "H.-S. Schm. 224-226. Gerh. Lycænen, t. 16, f. 3." (*sec.* Walleng. Sv. Akad. Handl. 1857, p. 41).

Several examples have been sent from Maseru. The species inhabits Turkey, and is noted by Mr. W. F. Kirby (Manual of Europ. Butt. p. 99) as "the smallest butterfly known to occur in Europe." It is widely spread in Southern Africa, as I met with it in the Noodsberg, Natal, and have received specimens from Kaffraria Proper (J. H. Bowker), Graham's Town (Mrs. Barber),

Port Elizabeth (J. L. Fry), and the Trans-Vaal Country (T. Ayres). The butterfly appears to be of larger size in these regions than in Turkey; Mr. Kirby giving its expanse of wings as only 7 lines, while of eight specimens now before me, the smallest expands nearly 8, and the largest fully 11 lines.

Lycæna Messapus.

Godart, Enc. Méth. ix. 682 (♂); Trimen, Rhop. Afr. Austr. ii. 254.

Of seven examples of the ♂ collected near Maseru, one has no orange lunule on the hind-wings, two have it very faintly marked, and the others present it of the ordinary size. Two ♀ are rather darker than usual on the upperside, and have the orange lunule well marked.

Lycæna Mahallokœna. (Pl. VI. figs. 7, 8.)

Wallengren, Svensk. Akad. Handl. 1857, p. 41.

It gives me great pleasure to be able to record this very curious form as one of Mr. Bowker's captures in Basuto-land. Until I saw specimens from Maseru, Wallengren's elaborate description was a perfect puzzle to me, for I knew of no *Lycæna* with a fulvous-yellow suffusion on the discal region of the wings. This suffusion varies greatly in extent: of six ♂ specimens forwarded from near Maseru, one has only a faint trace of fulvous-yellow in the fore-wings about the middle of the costa; another has a distinct suffusion in the same position, and a slight scaling of the same colour about the bases of the median nervules; two have it strongly developed along the costa, median nervure and branches, and submedian nervure, with a slight tinge of the same hue in the hind-wings, crossing the subcostal nervure and the extremity of the cell (these two examples agree most closely with Wallengren's diagnosis); and the two others present a broad field of the yellow occupying almost the whole of the fore-wings, except a narrow basal and wide hind-marginal space of blue, while in the hind-wings one of them has no suffusion whatever, and the other a

tolerably distinct one, radiating on the subcostal and median nervules. In size, general appearance, and the identity of underside markings, this butterfly comes so very close to *L. Messapus*, that one hesitates to regard it as a distinct species, especially when the gradations in the extent and strength of the yellow suffusion are duly considered. The development of the other orange lunules on the upperside of the hind-wings is a feature of distinction; and as it prevails in certain dark-brown females found in the same spots, in other respects quite like ordinary *Messapus*, it would seem to be a fixed tendency of a race, though somewhat unstable in character. None of the yellow-suffused males—not even the individual with the slightest tinge—has less than two orange lunules, instead of the one lunule usually present in *Messapus*, while in one strongly-suffused example there are three, and in another four.

In September, 1869, Mr. Walter Morant sent a ♂ and ♀ *Mahallokœna* taken within the boundaries of the Free State, on the banks of the Vaal River. The ♂ agreed pretty closely with Wallengren's description, but the hind-wings were almost devoid of any suffusion; and of the three orange lunules present, had only the central one well-marked. The ♀ possessed two lunules, and was remarkable for the unusual paleness of the underside, in which most of the markings were very indistinct. *

Lycœna Gaika.

Trimen, Tr. Ent. Soc., 3 ser., i. 403 (1862).

In my Rhop. Afr. aust. p. 257, I provisionally referred this species to *L. Lysimon*, but have since determined it as perfectly distinct; the insect named *L. Knysna* in my Catalogue (p. 255) agreeing thoroughly with the species labelled "*Lysimon*, Ochs." in the British Museum, and with the recognized *Lysimon* from Mauritius and Ceylon.

Two males of this remarkably slender and long-winged species have been sent from Maseru. These have

* Both sexes of *L. Messapus* are liable to indistinctness, or almost obliteration, of the underside; but in such cases I have observed the general ground-colour to be *darker* than usual.

a more general blue surface in the fore-wings than in the representation of a ♂ from Kaffraria Proper, given in *Rhop. Afr. aust.* (pl. iv. f. 7), and in this respect agree with examples found in other parts of South Africa, viz.: Kleinemond River, Bathurst (Mrs. Barber), many parts of Natal (M. J. McKen, W. Morant, and myself), and St. Lucia Bay (Col. H. Tower).

Specimens not differing from the South-African examples are in Mr. Layard's collection from Ceylon, and in the Hopeian Collection (Oxford Museum) from the Neilgherry Hills, Madras; but I have not been able to discover that any entomologist has described or named them.

Lycæna Tsomo.

Trimen, Tr. Ent. Soc. 1868, p. 91.

Mr. Bowker originally discovered this very distinct *Lycæna* in Kaffraria Proper, early in the year 1865. He then noted its abundance in swampy, reedy spots, near the River Tsomo, and in March, 1869, again met with it in the Drakensbergen, on a branch of the Orange River, frequenting similar spots, and "very numerous on Mint flowers." Other localities where Mr. Bowker has noticed the insect, are Tantjies Berg, and the R. C. Mission Station, near Thaba Bosigo.

Genus Aphnæus, Hübner.

Aphnæus caffer.

Trimen, Tr. Ent. Soc. 1868, p. 88.

The large series forwarded from Maseru from September to December, 1869, consisted, in both sexes, of examples rather smaller than the Natalian ones on which I founded this species, and differing from the latter in having the transverse gold-streaked black-edged stripes, as well as the widened inner submarginal hind-wing streak, of the underside, pale creamy-ochreous with a slight ferruginous tinge, instead of orange-ochreous. They also present

rather shorter tails on the hind-wings, and a smaller anal-angular orange-spot; which latter is almost wanting on the underside, being absorbed by the prolongation of the inner submarginal streak.

Accompanying my description of this butterfly, was a note of its habit of settling on low plants among the grass, unlike its close ally *A. natalensis*, which prefers high shrubs or trees. Its ground-loving habits appear to be much more pronounced in the Basuto country, for Mr. Bowker writes: "These butterflies are usually found on stones or on the ground, and rarely on flowers: and, beyond affecting a little state by shuffling backwards, they surpass the most grovelling *Zeritis*, in their love of dust and dirt. They keep much in pairs, and are easily caught, as they seldom fly for more than ten yards at a time, and often not half that."

Genus Chrysophanus, Hübner.

Chrysophanus Orus.

Papilio Orus, Cramer, Pap. Exot. iv. 84, pl. cccxxxii. f. E. F.

Cramer's figures are very roughly and carelessly executed, the spotting of the hind-wings on the underside being altogether unlike nature.

The solitary representative of the typical group of this genus is common and widely distributed in South Africa. Though I did not observe it on the coast of Natal, it was numerous on the higher land near Maritzburg and Greytown. Many examples have been sent by Mr. Bowker from Koro-Koro and Maseru, all of them rather larger and of paler colouring than those met with in the Cape Colony and Natal, and with the blue-violaceous lustre of the males unusually faint. *Orus* and its congener *Lara*, with *Pyrgus Diomus* and *P. Mafa*, are described by Mr. Bowker as the only butterflies that seem able to bear the severe winter of Basuto-land, appearing on sunny days in such fine condition as to induce the belief that they are but just out of the pupa. Two large and richly-coloured males have lately been sent me from the Trans-Vaal Country by Mr. T. Ayres.

Chrysophanus Lara.

Papilio Lara, Lin. S. N. ii. 791.

The specimens of both sexes sent from Koro-Koro and Maseru, are of the ordinary blunt outline of wings, but are rather darker than usual, and with the underside markings strongly defined. In two examples (♂ and ♀) the ocelli of both wings are on the upperside ill-defined, the white rings being very imperfect; and in one of them (the ♂) the upper ocellus in the fore-wings is wanting. I met with this species in Natal, near D'Urban, Maritzburg, and about the Great Noodsberg, but in no place found it numerous. The single example taken on the coast belonged to the variety *Gorgias,* Stoll (Suppl. Cram. Pap. Exot. p. 150, pl. xxxiii. f. 5, 5d). Mr. A. G. Butler, following the doubtful reference of Doubleday, has lately (Cat. Di. Lep. descr. by Fabr. in Coll. Brit. Mus. p. 178) located *Lara* in the genus *Zeritis,* with *Zeuxo, Thysbe,* and their allies; but with none of these, and still less with Boisduval's type of the genus, *Z. Neriene* (judging from that author's figure in pl. xxii. f. 6c, of the *Species Général*) does it at all agree in structure, its short slender palpi, and thin abruptly-clavate antennæ, being completely different from those of *Zeritis,* and altogether like those of *Chrysophanus.*

Genus Zeritis, Boisduval.

Zeritis Chrysaor.

Trimen, Tr. Ent. Soc., 3 ser., ii. 177 (1864); Rhop. Afr. austr. ii. 263.

Several specimens have reached me from Koro-Koro and Maseru, where Mr. Bowker notes the species as occurring on hill-tops among small shrubs. These examples are rather larger than the generality of specimens, one ♂ expanding as much as 1 in. 1½ lin., and one ♀ not less than 1 in. 2 lin. Several of the males are remarkable for the smallness of their black spots (in the hind-wings of one they are mere dots); and both sexes

for the small development of the steely centres to the spots on the underside of the fore-wings, which only mark somewhat faintly the five or six spots near the costa. A ♂ from Maseru has an unusually broad apical black border to the fore-wings.

This beautiful species keeps chiefly about high ground, the most elevated station at which I am aware of its having occurred being the summit of Gaika's Kop, in the Amatola Mountains (at the Southern extremity of the Division of Queenstown), a peak estimated to rise 6,800 feet above the sea, where Mr. Bowker took it on the 19th January, 1867. I have taken *Chrysaor* at Malmesbury, Port Elizabeth, and near Graham's Town; and in Natal, near D'Urban; since the publication of Part II. of my Catalogue in 1866.

Zeritis Thysbe.

Papilio Thysbe, Linn. S. N. ii. 789.

The specimens, seven in number, received from Maseru, all belong to the race *Palmus,* Cram., (Pap. Exot. iv. 100, pl. cccxli. f. F. G.), but are smaller than usual, having the bases of the wings more suffused with fuscous, the hind-marginal black bordering wider, and the cilia strongly alternated with black. One ♂ example has the costa of both wings (but especially that of the hind-wings) strongly clouded with fuscous; all the spots of the hind-wings singularly elongate posteriorly; and a total want of the external lunulate orange edging usually found between the hind-marginal bordering and the cilia.

Zeritis Thyra.

Papilio Thyra, Linn. S. N. ii. 789.

The single ♀ specimen, taken by Mr. Bowker at Koesberg, is of rather small size (expanding only 1 in. 2 lin.), and its colouring is rather paler than usual. The costal and hind-marginal fuscous borders of the upper-side are in both wings rather narrow. On the underside,

the hind-wings, and the costal and apical borders of the fore-wings are pale sandy-brown; and the spots constituting the central row of the hind-wings are rather less irregular and confluent than usual; while, in the fore-wings, the two spots immediately below the median nervure are only indicated by some blackish scales. The colouring of the body is more ochreous, and the alternate markings of the cilia more conspicuous than usual.

The description given by Wallengren (Sv. Akad. Handl. 1857, p. 44), under the name of *Chrysorychia Thyra*, Linn., does not at all agree with the Linnean diagnosis, noting a row of fuscous spots on the upper-side in both wings, which is wholly wanting in the Linnean species. Wallengren's insect is probably a well-marked ♀ of *Z. Chrysaor*.

Zeritis Pierus.

Papilio Pierus, Cramer, Pap. Exot. iii. 84, pl. ccxliii. f. E. F.

Of this very variable species, the numerous examples sent from Koesberg, Masern, and the Maluti Mountains belong to the form *Taikosama*, Walleng. (Svensk. Ak. Handl. 1857, p. 43), one ♀ agreeing with Wallengren's description in every particular. Cramer's figure of the underside is very roughly executed, the important hind-wing markings being carelessly treated; but I have concluded, after much examination, that it represents a vinous-tinged ♀ of the "Var. B," described in my Catalogue as so abundant near Cape Town.* From the latter, the Basuto-land form seems constantly to differ in the smallness and separation of the glistening spots forming the third transverse row on the underside of the hind-wings, and in the distinctness and separation from that row of the

* This being the case, the dark form of both sexes (in which the fuscous spots on the fulvous of hind-wings are united to the hind-marginal edging), described by me as the typical form, will have to rank as a variety of Cramer's insect. Felder's *Nais Almeida* (Reise der Novara, Lep., p. 264, pl. xxxii. f. 25, 26) is this dark form; and I cannot follow Mr. Butler (Cat. Fab. Lep. B. M., p. 176) in regarding *Almeida* as "a slight variety" of *Nycetus*, Cramer, the latter being totally different in the hind-wing markings of the underside.

fourth transverse row of spots; and on the underside of the fore-wings in having the spots of the inner of the two submarginal rows more or less distinctly marked interiorly with silvery-white.

The description given by Fabricius (Ent. Syst. iii. 320) of his *H. Seutonius*, agrees so well with Cramer's figure E in the character "posticæ margine postico nigro punctato," that it is right to give *Seutonius*, Fab., as a synonym of the type-form, instead of treating it as a variety, which latter course was followed in Rhop. Afr. aust., p. 275.

Zeritis Aranda.

Wallengren, Svensk. Akad. Handl. 1857, p. 43.

A ♂ and ♀ sent from Maseru do not differ from the Colonial specimens, excepting that the small black spot on the upperside of the hind-wings, near the anal angle, is almost obsolete in the ♀, and quite so in the ♂.

This was treated as a variety (A) of *Z. Pierus*, in Rhop. Afr. austr. p. 275; but its total want of the outer of the two submarginal rows of black spots on the underside of the fore-wings, seems a sufficiently important difference to warrant its being held a distinct species.

Wallengren rightly notes that, although *Aranda* seems nearly related to *Nycetus*, Cramer (Pap. Ex. pl. cccIxxx. f. F. G.) in the colouring of the upperside, yet the underside is widely different. I entertain no doubt that *Nycetus* is the *Thyra* of Linnæus, so well does the description in Mus. Lud. Ulr. Reg. (p. 329) apply to it, especially as regards the markings of the underside of the hind-wings, "maculæ et lituræ variæ, sparsæ, albo-subargenteæ; *quarum mediæ majores magis confluentes; posticæ vero strigam referunt.*"

Zeritis Molomo, n. sp. (Pl VI. fig. 9.)

♀. Exp. 1 in. 4 lin.

Allied to *Z. Pierus*.

Bright fulvous-orange: upperside as in *Pierus* ♀, but *the grayish-ochreous of the basal region in both wings replaced by the fulvous-orange*, which extends (even more completely than in *Z. Aranda*) over the basal half of

the costal edging of the fore-wing, and the inner-margin of the hind-wing; besides the row of inter-nervular black spots on the hind-margin of the hind-wing, a row of *nervular* spots immediately before the cilia, corresponding with the dark alternations of the cilia, in both wings, relieved by a very narrow edging of orange. *Hind-wing:* the downward projection of the apical fuscous patch indistinctly prolonged towards the inner margin by some indistinct fuscous marks.

Underside. *Fore-wing:* the spots as in *Pierus* in arrangement, but the inner submarginal row interiorly marked with silvery-white, as in the var. *Taikosama, and anteriorly with orange;* while the spots of the outer submarginal row are much smaller than usual, *orange-red, each with a black dot. Hind-wing: all the spots larger, broader, more metallic;* the spots of the third and fourth row enclosing a darker, brownish space; *an additional spot* just above discoidal cell, almost touching the spot in cell, that at extremity of cell, and a spot a little above and before itself; submarginal row of dots minute, fuscous. Ground-colour of hind-wing, and costal, apical, and hind-marginal border of fore-wing, *pale creamy-ochreous,* with (*in hind-wing*) a paler space just beyond the outermost row of metallic spots.

A single ♀ was forwarded from Koro-Koro, by Mr. Bowker, in December, 1868. Two specimens, of the same sex, sent by him from the neighbourhood of the Tsomo River, Kaffraria Proper, in October, 1864, differ slightly from that described, having the orange of the upperside rather paler; in *fore-wing,* the hind-marginal border rather narrower, the oblique costal patch commencing a little nearer to base, and the upward projection of the orange field at its outer extremity rather broader; while in *hind-wing* the interrupted downward continuation of the apical fuscous patch is not traceable. A small example (exp. 1 in. 1 lin.), which is damaged, but looks like a ♂, was taken in the Orange Free State by Mr. Walter Morant, in November, 1868, and more resembles the Basuto-land ♀ than those taken in Kaffraria. It has the costal patch of fore-wing and the apical one of hind-wing smaller and more acutely narrowed inferiorly; and in the hind-wing the inter-nervular spots form acute denticulations, and are united at their bases, so that the *nervular* spots are not to be distinguished; while, on

the underside, the spots of the outer submarginal row in the fore-wing are more distinctly black-dotted.

Z. Molomo combines most of the characters of *Z. Pierus* and *Z. Aranda*, but may be readily distinguished from both by the large size and comparative brilliancy of the metallic spots on the underside of the hind-wings.

Zeritis Leroma. (Pl. VI. fig. 10.)

Arhopala (?) Leroma, Wallengren, Svensk. Akad. Handl. 1857, p. 42.

With the exception of a single damaged specimen in the Hopeian Museum at Oxford* (which I did not in 1867 identify with Wallengren's species, but of which I made a description), I had seen no examples of *Leroma* until May, 1869, when I received one taken in Natal by Mr. McKen. In December of the same year, Mr. Walter Morant forwarded for identification a specimen of each sex captured at Pine Town, Natal; and in January, 1870, Mr. Bowker sent me a perfect ♂, taken in the previous December, at Vogel Vley, Jammerberg. This latter individual was taken "on the stony ground, among short grass and flowers."

Shortly after the receipt of these examples, I was so fortunate as to find the species commonly in the vicinity of Graham's Town. It is a very obscure little species, and would readily be passed over for one of the duller *Lycœnæ*. The first individual that I met with was sitting on a flower of *Acacia horrida*, and I pointed it out to Mr. H. Barber as a strange-looking *Lycœna*. Numerous other specimens were taken flitting about, near the ground, among herbage and low shrubs. These specimens vary in expanse of wings from $9\frac{1}{2}$ lin. (the smallest ♂) to 1 in. 2 lin. (the largest ♀).

The Basuto-land ♂ differs slightly from the ♀ described by Wallengren, in the somewhat darker colouring, and more distinct markings of the hind-wings on the underside. As compared with males from Graham's Town, Natal, and the Trans-Vaal (whence Mr. Thomas Ayres has

* In the Burchell Collection. Professor Westwood, who has religiously preserved every fragment of this interesting but much-damaged collection, kindly showed me Burchell's MS. Register of the same, in which this specimen is noted as having been taken at "Kosi Fountain; 25th December, 1812." This locality is marked on the map accompanying Vol. I. of Burchell's Travels, "Lat. 27-52-16," and is situate in Long. 24°, about 40 miles S. W. of "Lita(a)kun." (Latakoo.)

lately sent several specimens of both sexes), it is larger (exp. 1 in. 1⅓ lin.), darker, and with more acutely-pointed fore-wings, while on the underside its ground-colour is of a more ochreous tint. Mr. Morant's ♂ from Natal, though small (exp. 10⅓ lin.), has the metallic spots of the underside unusually bright and numerous, especially in the hind-wings. The examples sent by Mr. Ayres from the Trans-Vaal Country are singularly pale, with almost obsolete metallic dotting, on the underside; while the dull-ochreous spot at the anal angle of the hind-wings is unusually distinct. The three Trans-Vaal females are larger than usual, one attaining the exceptional expanse of 1 in. 5 lin. across the wings.

Wallengren, with doubt, referred this insect to the genus *Arhopala*, Boisd., and it was, consequently, mentioned by me as a possible species of *Amblypodia* (see Rhop. Afr. aust., pp. 227, 231); but, on examining numerous specimens, I am led to place it in *Zeritis*. With the type of this latter genus, *Z. Neriene* (as figured by Boisduval, Sp. Gen. Lep. i. pl. 22, 6. C, f. 6), *Leroma* presents a remarkable agreement in the underside markings, which is, however, much more apparent in the ♀ than in the ♂. As regards neuration, much reliance is not to be placed on the figures illustrating Boisduval's volume, but it should be observed that *Leroma* has only four sub-costal nervules in the fore-wings, while *Neriene* is represented as possessing five. In this particular point of neuration, *Leroma* agrees with *Z. Alphæus*, and with the otherwise aberrant *Z. Protumnus;* but the character seems to vary very much in the recognized members of the genus, the majority having five sub-costal nervules, while in *Z. Harpax*, Fab., (Syst. Ent., App. p. 829, = *Perion*, Auct., *nec* Cram.) I can trace three only. In the metallic spotting of the underside of the hind-wings, and the thin tails on the submedian nervures of those wings, *Leroma* approaches *Z. Harpax*, and *Z. Phosphor*, Trimen (Rhop. Afr. aust. p. 269, pl. iv. f. 12) but wants the anal-angular lobe of those species; and in general make and robustness, gradual clavation and length of antennæ, and formation and size of palpi, more nearly resembles *Z. Malagrida*, Walleng. (Sv. Ak. Handl. 1857, p. 43), than any other. *Leroma* differs from every known *Zeritis* in not presenting the slightest fulvous colouring on the upperside in either sex.

Zeritis Basuta.

Wallengren, Svensk. Ak. Handl. 1857, p. 46.

A ♂ and two ♀ from Maseru closely agree with Wallengren's diagnosis. As stated in Rhop. Afr. aust. p. 279, this form is linked to *Z. Protumnus*, Linn. (Mus. Lud. Ulr. p. 340) by several intermediate varieties from various parts of South-Africa; but as *Basuta* appears in both sexes to be a constant race in Kaffraria Proper, Natal, and Basuto-land, it may fairly claim to be treated as distinct. In a ♀ sent me from Pine Town, Natal, by Mr. Morant, the white markings are unusually well developed, especially in the hind-wings; but in two ♀ from the Trans-Vaal Country (collected by Mr. T. Ayres) those markings are even broader in the fore-wings, while in the hind-wings, though also very wide, they are suffused.

As in *Z. Protumnus*, there is a considerable difference in the antennæ of the sexes, those of the ♀ being throughout rather thicker than those of the ♂, especially towards the base.

Family PAPILIONIDÆ.

Sub-fam. Pierinæ.

Mr. Bates (Journ. of Entom. i. 218) has explained the grounds which lead him to associate the *Pieridæ* and *Papilionidæ* of authors as sub-families of the common Family *Papilionidæ;* a course which had been previously adopted by Mr. Stainton (Manual of Brit. Butt. and Moths, i. 12). There is undoubtedly a passage between the two (as suggested by Mr. Wallace, Tr. Ent. Soc., 3rd ser., iv. 314) afforded by the genera *Thais* and *Zegris*, the former wanting the interno-median nervule of the fore-wings, and the pre-discoidal cell of the hind-wings so characteristic of true *Papilionidæ*, and having, moreover, long porrect palpi, while the latter approaches *Thais* (and *Parnassius*) in its pupa stage. See Boisduval, Sp. Gen. Lep. i. 552-3.

Genus Pieris, Schrank.

Pieris Mesentina.

Papilio Mesentina, Cramer, Pap. Exot. iii. 140, pl. cclxx. f. A, B (♂).

Several males from Koro-Koro and Maseru agree in all respects with specimens of the same sex from other parts of South Africa. African ♂ specimens generally, as far as I have observed, differ from the Asiatic type-form in having all the black markings narrower and fainter (in which respect they approach *P. Gidica*) and also, as Hopffer has pointed out (Peters' Reise nach Mossambique, Ins. p. 352), in having the underside of the hind-wings white, or whitish with some few yellow streaks, instead of uniformly yellow. In the ♀ also, the hind-wings though yellow on the underside, are not of so deep a tint as is general in Indian and Cingalese examples.

Mr. Bowker notes this butterfly as "very numerous all over the country, constantly flying to the Eastward."

Wallengren (Sv. Akad. Handl. 1857, p. 8), and Wallace (Tr. Ent. Soc., 3rd ser., iv. 329) have noted, that in *Mesentina*, *Severina*, and a few allied species, the first subcostal nervule anastomoses with the costal nervure in the fore-wings.

Pieris Hellica.

Papilio Hellica, Linn. S. N. ii. 760.

Specimens of this very constant and abundant species, which is a near relative of *P. Daplidice*, were sent by Mr. Bowker from Maseru.

I found the species to be common in the higher lands of Natal, particularly near Pietermaritzburg and Greytown. In the Malmesbury division, which adjoins that in which Cape Town is situate, *Hellica* was unusually plentiful in September, 1869; and its abundance was still greater about Port Elizabeth and Grahamstown, when I visited those places in January and February, 1870.

Mr. Butler mentions (Cat. Di. Lep. desc. Fabr. in Coll. Brit. Mus. p. 205) that, in the Banksian Collection, the *P. Mesentina* of Cramer is queried as *Hellica*, Linn.; but the detailed description in Mus. Lud. Ulr. gives the characters of *four* white spots at the apex of the fore-wings, and the underside of the hind-wings, "venis reticulatæ *latis*, cinerascentibus, *desinentibus posterius in ramos* 6 *s.* 7, *lanceolatos*," which do not at all apply to *Mesentina*. Linné's omission to mention the yellow margining of the gray-clouded nervures, may have arisen from his having a worn or faded example before him.

Boisduval remarks, that *P. Glauconome*, Klug, from Egypt, Arabia, and Mount Sinai, "fait le passage d'*Hellica* à *Daplidice*" (Sp. Gén. i. 546). On a cursory examination of Klug's figures, I thought *Glauconome* to be probably a small variety of *Hellica*.

Pieris Eriphia.

Godart, Enc. Méth. ix. 157.

A single example was received from Koro-Koro.

I had the pleasure of meeting this beautiful species in life, for the first time, at Highlands, near Grahamstown, at the end of January, 1870, and during the following month met with it not uncommonly. It frequented steep hill-sides on the edges of woods, but never entered the shade of the woods themselves, delighting in the *Scabiosa* flowers, which were abundant in such stations. It is very conspicuous on the wing, and is easily captured, being rather slow of flight, and settling frequently. I afterwards saw the species on the wing, near Uitenhage.

Mr. McKen has forwarded fine examples of this butterfly from Natal, where Mr. Harford has also met with it. It appeared, also in a collection made at Potchefstroom, Trans-Vaal, by Mr. V. E. Noren; and, in 1867, Mr. Hewitson showed me an example from the Zambesi.

I have been unable to discover any characters to distinguish the *Tritogenia* of Klug, (Symb. Phys. pl. viii. f. 18, 19), from *Eriphia*, and do not know what led Boisduval to separate the two in his "Species Général" (i. 513).

Genus Callosune, E. Doubleday.

I have been led by a comparison of the Asiatic and African species usually grouped under *Anthocharis*, with the European typical forms of that genus, to follow Mr. F. Moore and Mr. Wallace in treating the section *Callosune* as generically distinct. The species composing that section differ constantly from the true *Anthocharis* in having the antennæ less broadly clavate; the palpi shorter, and not so hirsute; the sub-costal nervure of fore-wing with but four (instead of five) nervules; the upper-surface of both wings (at least in the ♀, and usually in both sexes) more or less varied with black markings; and the under-surface of the hind-wings entirely devoid of the characteristic variegation with greenish. Hübner separated *Evippe*, Linn., and *Eborea*, Cram., (=*Danae*, Fab.), from his genus *Euchloe* (see Verz. Bek. Schmett, pp. 94, 95), but his generic name of *Aphrodite* is pre-occupied in the Annelide Class. Wallengren has instituted for the extra-European species his genus *Anthopsyche* (Sv. Akad. Handl. 1857, p. 10), but Doubleday's *Callosune* has ten years' priority.

Callosune Evenina. (Pl. VI. fig. 11.)

Anthopsyche Evenina, Wallengren, Svensk. Akad. Handl. 1857, p. 12.

A single ♀ from Maseru expands 1 in. 8½ lin., and quite agrees with Wallengren's description, and with specimens collected in Damara-land by Mr. J. A. Bell, excepting that the large inner marginal spot of the fore-wings is distinctly united (on the first median nervule) with the basal fuscous. There were three examples of this species, taken near Potchefstroom, in the collection of Mr. V. E. Noren; and two other specimens, lately sent me from the Trans-Vaal Country by Mr. T. Ayres, agree closely with those from Damara-land.

This species (of which the ♂ remains unknown, though there are certain individuals of that sex inhabiting the same regions as *Evenina*, which I am strongly disposed to associate with it) differs from all the females of *Callosune* with which I am acquainted, in the peculiar distribution of the blackish markings on the upperside of the wings.

The fore-wing cell filled with blackish (not reaching to costal edge) ; the coinciding of the inner marginal spot of fore-wing with the costal mark of hind-wing, and the downward ill-defined extension of the latter so as, with the former and the basal blackish of fore-wing, to enclose a very oblique whitish ray common to both wings; and the width and straightness of the lower part of the hind-marginal border of hind-wing; all present unmistakeable resemblance to the markings of *Pieris Eriphia,* and constitute *Evenina* a most interesting link between the ordinary species of *Callosune* and the very isolated *Eriphia.* A specimen in Burchell's collection is noted in his MS. Catalogue as having been taken at the "Chue Spring, in the Maadje Mountains," situate a little N. of Lataku, in "Lat. 26° 18′ 11″," according to Burchell's Map.

Callosune Agoye.

Anthopsyche Agoye, Wallengren, Svensk. Akad. Handl. 1857, p. 15.

The only specimen received is a ♂, from Koro-Koro. It has the inner blackish edging of the apical ochreous patch of fore-wings rather wider than in the examples from Damara-land, and the nervures of the fore-wings only black-marked near that edging. An irrorated blackish marking (not mentioned by Wallengren, and only very indistinctly present in two of the Damara-land examples) extends along the outer half of the costa of the hind-wings.

This remarkable butterfly has the apical patch of the fore-wings unusually small, in which character, and its general outline and more or less black-defined nervures, it shows alliance with the violet-tipped ♂ *Anthocharis Phlegyas,* Butler (Proc. Zool. Soc. 1865, p. 431), from the White Nile.

I noted a ♂ from Damara-land in the Collection of Mr. Hewitson, in December, 1867. One in Burchell's Collection is noted, in his MS. Catalogue, as having been taken at his "Terminalia Station," which appears on the map accompanying his "Travels" in the neighbourhood of Lataku, Bechuana-land.

Genus Callidryas, Boisduval.

Callidryas Florella.

Papilio Florella, Fabricius, Syst. Ent. p. 479.

I think that there can be no longer any reasonable doubt, that *Rhadia*, Boisd. (Sp. Gen. Lep. i. 617), is only the yellower form of *Florella*, ♀. In 1862, Hopffer (Peters' Reise nach Mossamb. Ins. p. 365) pointed out that the colouring of the ♀ *Florella* differed from that of the ♂, varying from pale to gamboge-yellow on the upperside, but did not connect the deeper-hued examples with *Rhadia*. Mr. Butler (Cat. Di. Lep. desc. Fabr. in Coll. B. M. pp. 224-5) has recently published some remarks indicating a belief that the two constitute but one species; and I may add that not only does the constant occurrence of the two in the same localities favour that belief, but that on one occasion near D'Urban, Port Natal, I took a white ♂ and yellow ♀ *in copulâ*. Females of the paler colouring are certainly scarcer than the others; but Mr. Bowker writes that he has noticed them in Basuto-land, and Mr. Hewitson possesses one from Madagascar, which resembles the yellowish white specimen from Bourbon, figured in M. Maillard's "*Notes sur l'Ile de la Réunion* (*Bourbon*)," published in 1862.

Hopffer notes (*loc. cit.*) the great difference in size that prevails in this *Callidryas*, observing that his smallest example expanded only 1 in. 9 lin., while the largest was over 2 in. 6 lin. While I have remarked no specimen less than 2 in. in expanse, I have measured a fine Basuto-land ♂ from Mr. Bowker,* and a Trans-Vaal ♀ from Mr. Ayres, both of which expand 2 in. 9½ lin.

The genus *Callidryas* is celebrated in the warm regions of the earth, and notably in tropical South America, for vast assemblages of apparently migrating individuals. Darwin, Schomburgk, Bates, and Spruce are among those who have given us the most graphic accounts of these innumerable hosts, which progress steadily in a particular direction. Mr. Bates' observations led him to believe that the migrating hordes were composed of males only,

* This individual possesses in high perfection the row of radiating silky hairs on the inner margin of the fore-wings, noted in my Rhop. Afr. aust. p. 68, as occurring in two males from British Kaffraria.

but Mr. Spruce (Journ. Linn. Soc. Zool. ix. 357) gives an instance in which females also were undoubtedly present. It is interesting to find the same phenomenon presented by *C. Florella* in Basuto-land, Mr. Bowker describing it as follows, viz: "During my trip to No-Man's-Land, in March, 1869, I crossed the Maluti Mountains at two different points, going and returning, and throughout the journey, whenever there was a gleam of sunshine between the prevalent showers, the exodus of *Florella* and *Rhadia* continued in one uninterrupted stream. These butterflies were to be seen in countless numbers, from the deepest and darkest valleys through which the Orange River forced its way, up to the highest peaks, 10,000 feet above the sea; *and all were steadily moving on Eastward.* Sometimes one of them would stop to take a sip from a tempting *Gladiolus*, or even turn back a few yards for that purpose, but it would be only for a minute, and then off he would hurry again, as if fearful of being left behind by his comrades. I have noticed the same swarms in the Trans-Keian Country, and also in the Cape Colony; in the latter, I believe, other members of the *Pieridæ* were concerned." It has never been my own good fortune to witness one of these wonderful moving hosts, and I can therefore express no opinion on the subject; but it may be worth while to note, in connection with it, the well-known habit of almost all *Pierinæ* of proceeding straight onward, with more or less directness and rapidity in their flight. Even the weak and fragile *Terias*-species pursue this course, though their flight is slow and near the ground; and with *Pieris, Callosune,* &c., it seems to be the rule. I lately was much struck with this in the case of such robust species as *Pieris Charina, P. Severina,* and *P. Gidica,* which were very numerous near Grahamstown, and might be seen to a considerable height above the ground, on fine mornings, winging their way in one direction. Though *Pierinæ* visit flowers very freely, it is seldom that they hover about a particular plant trying each separate blossom after the manner of so many other butterflies; they very generally take a hurried sip of nectar and are off, not settling again for some little distance. This tendency seems to attain its maximum in such genera as *Eronia* and *Callidryas* which are the most robust and swift-flying of the group.

Genus Colias, Fabricius.

Colias Electra.

Papilio Electra, Linn. S. N. ii. 764.

This species seems universally distributed throughout South Africa, and extends into the tropical region on the Western side, Mr. J. A. Bell having brought two specimens from Damara-land in 1862. It is very numerous in Basuto-land, and the pale form of the ♀ appears often to occur there.

There is probably no genus of butterflies that ranges over all latitudes to such an extent as *Colias*, for even *Pyrameis* is not recorded from such extremes of North and South as Labrador (*C. Pelidne*) and Patagonia (*C. Lesbia*), Lapland (*C. Boothii*), and the Cape. Mr. Bates (Journ. Entom. i. 230) observes that in tropical America, the genus is confined to the highest plateaux of Columbia;* and I am not aware that any species occurs in tropical North-Africa, or tropical Asia, with the exception, in the latter region, of *C. Nilagiriensis*, Felder, the Indian species generally being Himalayan.

Sub-fam. Papilioninæ.

Genus Papilio, Linn.

Papilio Demoleus.

Linn. S. N. ii. 753.

This is the most widely-spread *Papilio* in Southern Africa, and the only one of the genus that extends to Cape Town. Two ♂ sent from Maseru are unusually small, one expanding 3 in. 2 lin., and the other barely 2 in. 9 lin., the bodies being of proportionate size. Mr. Bowker observes that individuals of this dwarfed stature are not uncommon in Basuto-land, but that specimens of various sizes, up to the ordinary one (exp. about 4 in.), also occur there.

* *Colias Cesonia*, Stoll, (which, however, constitutes an isolated section of the genus) is recorded from Mexico, as well as from several of the West Indian Islands.

Among a number of specimens reared from larvæ feeding on the common Fennel, near Cape Town, by Captain Sandford, R.E., was a female (kindly presented to me by that gentleman) in which most of the pale markings on the left-hand wings are ill-defined and suffused, the submarginal spots being wholly wanting in the hind-wing, and almost obsolete in the fore-wing, while the two disco-cellular spots in the fore-wing are completely confluent. These peculiarities extend to the underside; and the right-hand wings also have two or three spots either quite or nearly obliterated.

The very nearly-allied Indian species, *P. Erithonius*, Cram. (Pap. Exot. iii. pl. ccxxxii. f. A, B) is readily distinguished on the upperside by the broader and much broken-up band of the hind-wings, and the want of any blue ocellate mark in the red spot at the anal angle; and on the underside of the same wings, by the black sub-basal bar (so very broad in *Demoleus*) being merely a narrow black streak, and by the much narrower dark space bounded by lunules beyond the middle.

Fam. HESPERIIDÆ.

Genus Pyrgus, Hübner.

Pyrgus Diomus.

Hopffer, in Peters' Reise nach Mossambique, Ins. p. 420, pl. xxvii. f. 9, 10.

In my Rhop. Afr. aust., p. 288, I doubtfully placed *Diomus* as a variety of *P. Vindex*, but have since seen reason to think that its differences from that insect warrant its being held distinct.

A single ♂ from Maseru differs a little on the underside from Hopffer's figure, being paler and more inclined to yellowish in ground-colour, particularly on the hind-margin of hind-wings, where the transverse white line shades imperceptibly into the unvariegated pale ground beyond it; while the two transverse white stripes are rather narrower and more oblique. In these respects, the specimen closely resembles an example lately taken in the Trans-Vaal Country by Mr. Ayres.

Pyrgus Asterodia.

Trimen, Tr. Ent. Soc., 3 ser., ii. 178 ; Rhop. Afr. aust. p. 289, pl. v. f. 6.

An example sent from Koro-Koro is rather larger than usual, expanding 11 lin., and the ground-colour of the underside is rather darker, and not so ochreous. A similar specimen, of even larger size (exp. 1 in.), was taken by Mr. W. Morant, in the Orange Free State, at a spot named "Doorn Kopje." This latter individual presented an additional white dot just beyond the lowest spot of the discal row in the fore-wings.

Pyrgus Mafa, n. sp. (Pl. VI. fig. 12.)

Allied to *P. Vindex*, Cram. (Pap. Exot. iv. 122, pl. ccclii. f. G. H).

Exp. 11½ lin.—1 in.

Black, spotted with white: the spots in number and arrangement quite as in *P. Vindex*, but mostly smaller, and very sharply defined.

Underside. *Hind-wing:* the sub-basal and central white stripes *rather narrow, not oblique, interrupted more or less markedly in two places;* of the separate spots or portions of the stripes, the largest is the middle one of the central stripe, *which is denticulate both inwardly and outwardly,* but *much more strongly* outwardly; *a submarginal row of distinct white dots,* continuous of that in the fore-wing ; the inner-marginal fold widely white.

The characters italicised above seem to be constant, and I have therefore treated the race as distinct. Mr. Bowker found this *Pyrgus* not uncommon, most of his specimens having been captured at Maseru, and one near Koro-Koro. An example in Mr. W. Morant's collection was found at Potchefstroon, Trans-Vaal.

Genus Cyclopides, Hübner.

Cyclopides Tsita, n. sp. (Pl. VI. fig. 13.)

Allied to *C. Lepeletierii*, Godt. (Enç. Méth. ix. 777), and *C. inornatus*, Trimen, (Tr. Ent. Soc., 3 ser., ii. 179; Rhop. Afr. austr. p. 295, pl. v. f. 11).

Exp. 1 in. 1-1½ lin.

Dark brown, spotless; cilia paler.

Underside. Hind-wing, and costal and apical border of fore-wing, pale grayish-ochreous, sometimes with a slightly rufous tinge. *Fore-wing:* the ground-colour rather paler than on the upperside. *Hind-wing:* discoidal and median nervules more or less defined with dull-whitish; the inner-marginal fold dusky brown, like the field of the fore-wing.

This inconspicuous insect occupies an intermediate position between the two species mentioned above, being smaller than *Lepeletierii* and larger than *inornatus*, and wanting alike the conspicuous white stripes on the underside of the hind-wings of the former, and the somewhat ferruginous tint and indistinct spotting of the under-surface of the latter.

Mr. Bowker forwarded several examples from Koro-Koro in December, 1868, noting that the insect was local, flitting about long grass by the river sides in the valleys, and occurring in such spots up to a considerable elevation. I took examples of this butterfly in Natal, on the Tongaati and Jutzutze Rivers, but at the time thought them to be *C. inornatus*. Their habits quite agreed with those described by Mr. Bowker.

Cyclopides Syrinx.

Trimen, Tr. Ent. Soc. 1868, p. 93, pl. v. f. 8, ♂.

♀. Exp. 1 in. 3 lin. Spots of a deeper yellow than in the ♂. *Fore-wing:* the outermost spot of the discal row, forming in the ♂ the third or fourth of the oblique streak between the cell and apex, scarcely traceable. (Scarcely a trace is visible in either wing of the submarginal row of ill-defined spots.)

Underside. *Hind-wing:* the ground-colour very much paler, inclining to grayish; both the longitudinal stripes broader, the superior being yellower, and the inferior whiter than in the ♂.

Mr. Bowker only sent the ♂ of this species from the site of its discovery in the Amatola Mountains. The ♀ from which the above description is made, was taken in the Maluti Mountains, where Mr. Bowker found the butterfly frequenting the same "mountain bamboos" as on Gaika's Kop.

Cyclopides Malgacha.

Steropes Malgacha, Boisduval, Faune Ent. de Madagas. &c., p. 67.

Six Basuto-land examples, of which two are ♀, have the underside colouring of the hind-wings and apices of fore-wings considerably paler than in Cape specimens, and approaching the hue above described in the ♀ of *C. Syrinx*. One of the females is remarkable for the well defined rows of submarginal spots on the upperside (especially in the hind-wings), and for the vivid orange of the spots on the underside. In March, 1869, Mr. Bowker met with this species near the heads of the Umzimvoobo, or St. John's River, on the Kaffrarian side of the Drakensberg.

Genus Pamphila, Fabricius.

Pamphila Letterstedti.

Hesperia Letterstedti, Wallengren, Svensk. Akad. Handl. 1857, p. 49.

A ♂ received from Mr. Bowker is very strongly suffused with yellow, more so than the "var. ♂" described in Rhop. Afr. aust. p. 301, and with paler cilia than usual; while the yellow of the underside has a greenish tinge. A ♀ has all the markings strongly defined. The species was taken by Mr. Bowker near the heads of the Umzimvoobo, in March, 1869.

Pamphila (?) *niveostriga.*

Trimen, Tr. Ent. Soc., 3 ser., ii. 179; Rhop. Afr. austr. p. 298, pl. vi. f. 7, ♂.

Mr. Bowker met with this curious Skipper at Koro-Koro, in the Maluti Mountains, and on the banks of the Makaleng River, and forwarded a ♂ and two ♀ to Cape Town. The male is smaller than the specimen sent from Kaffraria, expanding only 1 in., and has the fore-wings less pointed at the apex; while on the upperside of the fore-wings the first sub-apical, upper cellular, and lowest discal spots are wanting, and on the underside there is no cellular spot, and the two discal spots are very faint.

♀. Exp. 1 in. 3 lin. Duller and paler than ♂, but with a stronger yellow-ochreous gloss, particularly in fore-wing. *Fore-wing:* spots of a duller whitish, in one example as in ♂, in the other all but obsolete.

Underside. Ground-colour duller and more ochreous. *Fore-wing:* the three spots very indistinct in one example, and obliterated altogether in the other; inner marginal fuscous (as in Basuto-land ♂) faint and narrow.

Mr. Bowker notes this local species as occurring among long grass and rushes, near water. Near the Hermansburg Mission Station, in Natal, on the 10th March, 1867, I captured six examples on the summit of a lofty hill-ridge; they were flitting about the purple flowers of a leguminous shrub of moderate height, which was common in one spot, in company with *Pyrgus Mohozutza* and many other butterflies. I have not access to these examples at present, but to the best of my recollection, they were closer to the Kaffrarian than to the Basuto-land specimens. Both sexes of the last-named have the snow-white stripe of the underside of the hind-wings narrower and less bright than it appears in the Kaffrarian type specimens.

Genus Ismene, Swainson.

Mr. Butler has recently (Cat. Di. Lep. descr. Fabr. in Coll. B. M., pp. 269-70), identified with the much-debated Fabrician genus *Hesperia*, the generally received species of *Ismene*, such as *I. Iphis*, *Pisistratus*, and *Helirius*, but merely notes, "The description applies best to *Hesperiæ Urbicolæ* of Fabricius."

Ismene Florestan.

Papilio Florestan, Cramer, Pap. Exot. iv. 210, pl. cccxci. f. E, F.

Mr. Bowker observes that this species was rather rare at Maseru: it visited the flowers in his garden, both morning and evening. A specimen received from Basuto-land presents no variation from the generality of examples. Both in Natal and near Grahamstown, I found this butterfly visiting flowers a little after sunset, as well as during the heat of the day.

Ismene Pisistratus.

Papilio Pisistratus, Fabricius, Ent. Syst. iii. 345.

This species is evidently identical with Wallengren's *Rhopalocampta Valmaran* (Sv. Ak. Handl. 1857, p. 48), which was treated by me (Rhop. Afr. aust. p. 319) as a probable variety of *I. Florestan*, but which, I am now decidedly of opinion, is a distinct species.

I have not seen any Basuto-land example, but Mr. Bowker writes that the butterfly was not uncommon at Maseru in the autumn, appearing about a fortnight after *I. Florestan*.

Explanation of Plate VI.